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In this way, the clear light of truth is gradually obstructed, and sometimes almost wholly lost. It belongs to a few superior spirits, and it is the proof of their superiority, to feel the importance of these views, to separate them from the mass of error with which they are mingled, not so much by attacking the false as by insisting on the true, and to bring them home with power to the hearts of others. This is the leading object of the writings of Dr. Channing, considered as expositions of general principles. He knows and feels that philosophy, rightly understood, is, as we have repeatedly remarked, only another name for religion. "It is the property of moral and religious faith," to use his own fine expressions in the above extract, "it is the property of moral and religious faith, to see in the Finite the manifestations of the Infinite, in the Present the germ of the boundless Future, in the Visible the traces of the Incomprehensible Unseen, in the power and wants of the soul its imperishable destiny."

This is the sum and substance of the philosophical doctrine of Dr. Channing, and of all true philosophy, by whatever name it may be known. It is when thus understood, that philosophy becomes indeed, as Milton calls it, divine; that its cultivation is identical with the progress of truth, virtue, civilization and human happiness. The men whose superior talents and purity of purpose qualify them to take a leading part in carrying on this work, are the great benefactors of our race, and we reckon Dr. Channing among the number. We offer him our grateful acknowledgments for the good he has already done, and we trust that his future labors will allow us frequent opportunities for renewing them.

ART. VII. — *Study of Natural History.*

A Preliminary Discourse on the Study of Natural History. By WILLIAM SWAINSON. London. 1834.

IT is well to take every opportunity to extend a taste for the study of Natural History; for popular as it is, compared with former days, it does not yet inspire a general interest at all proportionate to its importance. Doubtless it is made the subject of lectures in all the cities, and most of the villages of our land; and we could not say that anything was wanting, if a taste for

the results of study were all that it is necessary to form. These are so brilliant and striking, that they cannot be set before the most unintellectual of men, without producing in them emotions of delight. But, unfortunately, a taste for such results is one thing, and a taste for the study is another ; and out of the thousands who enjoy such displays of the treasures of science, there may not be one who is disposed to submit to the labor, self-denial and sacrifice, which science requires of its disciples ; neither have such displays any tendency to form that passionate love of truth, — that thirst for searching and exploring, — which bears men up in the laborious process by which discoveries are made. If we remember aright, Rousseau pointed out this error in education many years ago. It is forming a taste for having, where the object is to form the taste for earning ; the former is mere indulgence, the latter is exertion. Such exertion gives health to the mind, while the enjoyment of which we speak soon becomes satiety, and in a short time, the power to enjoy is lost. The object of such discourses as this, then, should be to shew that there is pleasure, not only in knowing but in learning ; and that every intelligent man will enjoy what he has learned by his own efforts, far more than that which is supplied to his hand. There is no doubt that the man who earns his bread by the sweat of his brow, enjoys it more than he who sits in luxurious repose, to be served by others ; considering enjoyment alone, it is better to labor than to rest ; but this is not the only circumstance to be regarded ; there is another question, which tends most to confirm the health and vigor of the physical system, and to prepare it to resist the waste of time and the infirmity of declining years. So there is no doubt, that he who travels patiently over the field of natural science, enjoys his accessions of knowledge, far more than if he had them all spread out before him without any labor of his own ; and, so far as respects the health and vigor of his mind, it is exceedingly important that he should deal more with processes than results, and find his happiness in the excitement of the race, and not the value of the prize.

We are inclined on this account as well as others, to think well of such discourses as this. They shew by the spirit with which they are written, what kinds of interest and devotion these pursuits are able to inspire. It is not their object to shew the student what he will find as he advances ; this is left for him to discover ; they would rather convince him that the

pursuit itself, apart from the consideration of its success, will be its own reward. No evidence can be more convincing for this purpose than that of those veterans in the science, who have undertaken pilgrimages and encountered hardships in a spirit of deep devotion to the study ; sustained in it, not by encouragement nor by applause, but by the self-rewarding principle, which ensures that services and sacrifices in a disinterested pursuit shall always be overpaid. It is not every one who will become a scientific naturalist ; nor is this necessary ; without mastering the details of science, men may become useful observers ; and in this way, be able, without pretension and almost unconsciously, to secure improvement for themselves, and render service to the world. White of Selborne is a familiar example ; he never pretended to be a scientific naturalist ; his whole ambition was to furnish observations to those who would be able to arrange and use them ; and yet, perhaps, there is no one who has done more to extend the taste for natural science than he. There was nothing in his situation peculiarly favorable to such pursuits ; he had no more leisure to devote to them than most men may secure to themselves if they will. As to his field of observation, it was nature ; the same nature which is spread out under every eye ; and no man can say that the place where he dwells is barren, till he has ascertained by actual observation that it affords nothing to reward attention, or to inspire thoughtfulness in the mind. The frozen plains of the north, and the fiery regions of Africa, have rewarded investigation with treasures, which have been thought cheaply purchased, by encountering hardships and dangers ; if so, it is not likely that any part of the inhabited world will be found, which does not merit, and will not reward the attention of observers. Since the number of scientific naturalists must be small, it is very desirable to form a class of observers, who may aid the cause of science without being able to make it the business of their lives.

But what good will the study of Natural History do ? It is a fair question ; and no general interest can ever be awakened in the pursuit, till it is answered to the satisfaction of those who ask it. At the same time this is no easy matter ; since what will interest one mind to the full extent of its powers, may not be able to make the least impression on another. If any one, after reading the *Iliad*, ask what good it will do, the proper answer would be, that it would do very little good to him. If

any one, looking over the face of nature, can see nothing inspiring in its beauty, it will be of little service for him to keep looking on in the hope of enjoying it more. If any one, however, should ask the same question before reading it, there would be some hope of answering it to his satisfaction. And thus, if any who have paid attention to the studies recommended in the work before us, ask concerning their utility, it will be a waste of time to endeavor to point it out ; the book of nature is one which they will never learn to read. There are those who really desire to engage in every liberal pursuit, and whose minds and hearts are open to everything which promises improvement or delight. These are the persons whom the naturalist should endeavor to engage in the service of science ; he may endeavor to convince them ; and he may enter upon the undertaking with a confidence like that which, in former days, we have heard teachers of youth express, on occasions when we thought the oracle more doubtful : “ that they will remember it, and thank him for it, to the longest day they have to live.”

It will not be difficult to shew to every one who asks the question, whatever his age, profession, or pursuit may be, some benefit which these studies can bestow. They have one decided advantage over almost all others ; they bring at once the body and the mind into action, since every one who has anything of the naturalist about him, leaves his books and the narrow enclosure of his study, and goes forth into the open fields of nature. It is manifest that pursuits, which thus excite the physical and intellectual powers, remove the unnatural inconsistency, which perverted education has established between study and action. It certainly never was intended, that while the mind is exerted, the body should be palsied by disease, nor was it any part of the design of Providence, that those who live by the labor of their hands, should leave their minds forever inactive and barren. It seems to us, that the studies in question reunite what man has unwisely separated, and are, therefore, best suited to our nature. Those who, like the author of this discourse, are desirous to extend a taste for these liberal studies, have a great encouragement in the fact, that they are everywhere met and welcomed by a deep and strong love of nature. It seems born in the soul of man ; it strengthens with his strength ; it has much power where it has never found a voice, among those who are thrown into familiar inter-

course with nature. Even among those who have no such advantage, — even under the exhausted receivers in the depths of the city, there are many indications which shew that this passion can never be rooted out from the breast. It is manifested by deeds, not words ; those in whom it exists may not be able to talk in sentimental phrase concerning the beautiful and picturesque, and will, therefore, be set down as wholly insensible ; but any one, who knows how to touch the spring of feeling in their soul, can appeal to it, and awaken it with power. In the darkest lanes of the city, bright flowers look out from the window, and bear witness that the love of nature is there. If there be a garden, like that commemorated by Martial, where *nec cucumis possit jacere rectus*, not even a cucumber has room to lie straight, flowers will be seen breathing incense on the ungrateful air, which returns any thing but incense to them. Even boys, the most merciless of all destroyers, have their pet animal, and are subdued into something like humanity by their regard for their playful charge. The birds, too, — not only the familiar robin, but the wild baltimore and the retiring warbler, sing with confidence, believing that some will listen to them in the rattling street, as well as in the Sabbath stillness of the village. Who does not rejoice in the spirit-like song of the bird, when he comes to assure us that spring has released the sweet influences of Pleiades, and bound Orion in chains ; or when he hurries from the north, as soon as he hears afar off in the mountains the first murmurs of the winter storm ? He seems conscious of man's attachment ; he lingers long after the leaf has fallen, — till the winds of autumn are singing their vesper hymn. Wilson expressed a natural sentiment, when he desired to be buried where the birds might sing over his grave. In truth, this love of nature, in all its forms, is universal as the human heart. Mrs. Hemans, in her beautiful invocation, calls for flowers for the festival, for the conqueror and the bride. But nature had already taken this in charge. At her suggestion, flowers from the earliest ages have crowned the celebrations of joy, of glory, and of love. She would have found them also in places of sorrow ; in the captive's lonely cell ; in the field where the weary are at rest ; for there, perhaps her own grave may bear witness, the love of nature suggests the last proof of delicate attachment, and flowers bloom upon the grave.

The tastes of childhood, to which we have just alluded,

shew that the feeling is as general as we have represented it. The very infant delights in the young animal, and watches its motions with an interest which makes him quite forget the plaything in his hands. He holds the shell to his ear, with thoughtful attention, as if he hoped it would whisper something of the mysteries of the deep from which it came. Can any reader of Wilson forget the child who came with a glowing face to his mother, saying, "Look, my dear mother, what beautiful flowers I have found growing on our place! Why! all the woods are full of them! Red, orange, blue, and 'most every color. Oh! I can gather you a whole parcel of them, much prettier than these, all growing in our own woods! Shall I, mother? shall I go and gather more?" The naturalist said, that the feeling of the boy precisely resembled his own. Would it not be easy to cherish that fine enthusiasm, whether in youth or age, till it becomes an intellectual thirst for knowledge? There is no doubt of it. This pleasure, in beholding such objects, inspires the wish to know more of them, and to ask those questions which science offers to answer. It would be easy, also, to exalt it into a religious feeling. The eye glides naturally over a sweet evening prospect to the clear heaven beyond; so it passes, of itself, and without effort, from the contemplation of nature up to nature's God.

But it may be said, that there are some, practical and intellectual men too, who are wholly indifferent to these things. It is true that there are men, like the geometrician of Montesquieu, who, describing a lovely country-seat, said it was a house thirty-five feet by sixty, with a garden of ten acres. There are some also, who, as Voltaire irreverently described a great English divine, are "reasoning mills," with eyes habitually turned inward, and, of course, incapable of seeing the world about them. There are some men, like Johnson, who, from defect of the senses, cannot see such things, and, of course, can hardly be expected to enjoy them. But except where there is physical disability, or when the course of life is singularly unfavorable to the cultivation of this taste, we are sure to find it. It may not, as English travellers expect, be paraded in the chance company of a steamboat or stage coach, nor will one who feels it, speak of it quite as freely as of the politics of the day. Still it exists in all cultivated minds, with very few exceptions; and to those we may apply Locke's remark concerning the oyster, which he says is

lashed to the rock, and obliged to take whatever the sea washes into its shell. "Hence we see the goodness of Providence, in making its sensations so few and dull."

The few who are wholly indifferent prove nothing against the general truth, that the love of nature belongs to the human heart. Uncultivated men, who have no system to guide them, are often attentive and accurate observers, and those who make inquiries of them are surprised at the amount of information which they are able to give. Men of business, worn with their cares, always look upon it as one of the ends of their labor to be able to retire into the country; and if, when they retire, they find that the habit of business has destroyed their relish for it, still the desire of such retirement, kept up through so much laborious excitement, shews how strong it must be. Those who plunge into the stirring concerns of public life, have always counted it a privilege, as well they may, to retreat from the dusty strife to the passionless excitement of the world of nature. And how can it be otherwise? There is an expression in the face of nature, that can be seen by every eye, — a gentle and gracious expression, which inspires confidence and love. We know not why it is, that divines have found so much fault with the doctrine of Pope's *Essay on Man*, that "the body nature is, and God the soul;" philosophical examination it may not bear; but considered as poetry, it well expresses the truth, that nature is not inanimate nor unmeaning; that there is something in it which gives it spirit, life and expression; and that this soul of the universe is no other than the Being whose power created, whose wisdom sustains, whose goodness crowns it all.

This love of nature as a "thing of life" explains the fact, which is well known to many who are unaware of the cause, that in our communion with nature, we never feel alone. We feel solitary when we do not find man among the works of man. A deserted house is one of the dreariest places in the world; it is more dreary than the raw chillness of a new-made grave; and so is a deserted city, till nature has covered its ruins with verdure, and made it her own again. But we feel no such overpowering sense of loneliness among the works of God; there is reverence and awe indeed, when man stands on the sea shore, — when he gazes on the expanse of the desert, — or when he stands at midnight on the deck of a vessel in the heart of the seas. Why is it so? Among

the forsaken works of man we feel solitary, because man is not there. Among the works of God we never feel so desolate, because he *is* there. We find this confirmed by the adventures of the West; they have complained of loneliness only when in presence of men. So in the Arabian deserts, Châteaubriand found an intelligent young countryman of his own, who was so enchanted with their sublime solitudes, that he had given up his friends and his home. How powerfully this sentiment can sometimes act upon the heart, we see in one of the most striking of Park's adventures. He was in an African wilderness, far from any abodes of men, overcome with weariness, and alarmed by beasts of prey. He felt as if all was over with him, and was on the point of lying down in despair, when his eye rested on a little flower, blooming alone amidst the desert sands. It carried his thoughts upward at once to Him that made it. He asked himself if it were possible, that the Being who sustained that little flower in existence, could withdraw his presence from suffering man. He no longer felt helpless and alone; he went his way with new vigor, and soon reached a place of relief and repose. Had he felt deserted, he would in an hour have been torn by the beasts of the desert, and to this day his bones would have whitened in the sun.

So far from being an uncommon thing, the love of nature often manifests itself on a large scale with the intensity and power of the strongest passions. For in this, we take it, are we to look for an explanation of the mystery of that patriotic feeling, which has sometimes wrought so powerfully in the hearts of those who are absent from their native country. The love of country is founded in local attachment; it is found clinging to the scenery and natural objects of the father-land. No man ever forgets the tree that shaded the home of his childhood, nor the stream that ran near the door. When such objects are grand and striking, as in the mountains of Switzerland, they take firmer hold upon the memory; the images are more vivid, and the associations are proportionally strong. This was the case with the Hebrews; on the dry plains and beside the slow rivers of Babylon, they were haunted with the vision of the hills and valleys of their own romantic land. Such examples have been found in our own country, little as it may be credited by those who believe that human nature differs in different regions of the earth. During the revolutionary war, there was a time, when some of the best and bravest men in

the southern army actually died, man after man, in consequence of that sickness of heart, produced by absence from their home. Nor is this to be ascribed to the strength of domestic attachment ; it is a more expansive feeling ; it attaches itself not so much to the fireside, as to the "blue hills of our native country." The savage, who has little domestic happiness, is no stranger to its deep devotion ; all his eloquence consists of images which shew that nature is before his mind ; and there can be no doubt that the love of nature is one of the chief elements of that love of country which, in numberless memorable examples, has shewn itself able to bid defiance to the grave.

We have said so much, — perhaps more than will be read, — concerning the love of nature, because it is the cause and spring of all improvement in these studies ; and if it exist so generally, it cannot be hard to inspire that interest in these pursuits, which they require and deserve.

But some may doubt whether this feeling, of which we have spoken, will accept the guidance of science, and submit to its restraints ; whether it can be elevated from an imaginative sentiment into a steady and well-governed enthusiasm, such as improvement in science requires. On this point it can be easily shewn, that wherever there is scientific zeal, it is invariably associated with a strong attachment for nature ; and more than this, there are examples to shew, that those who have made themselves illustrious in these pursuits, had their attention turned to the subject by the early love of nature. Linnæus himself is believed to have formed the taste, which afterwards made him so illustrious, from his delight in the flowers of his father's garden. The elder Bartram, who stood so high in the estimation of the naturalists of his day, was an entire stranger to science, though a thoughtful and observing man. In the early part of his life, — indeed, through all his life, — he was a husbandman. One day when, weary with ploughing, he rested under a tree, he observed a flower, one of those things on which he had often loved to look. He longed to know something of its history ; — then he determined to know all that could be learned concerning it. This was the spring that required to be touched ; in the same hour, the lover of nature became a naturalist, and the spirit then awakened never slept to his latest day. At the age of threescore and ten, he was exploring the wilds of Florida, then a country as dangerous and inaccessible, as could now be

found in North America. Wilson is another example. He loved nature so well that he became a pedler for the sake of enjoying it, and with the exception of Wordsworth's friend, was probably the only one of that calling, in whom this passion overpowered the love of gain. The vocation, as he pursued it, was not easy nor profitable; still, it served to nourish the taste which he afterwards indulged in this country with so much renown. We wish we could say, happiness; but it is ordered that these pursuits shall be their own reward, and that the prize, immortality, shall not come till the mortal life, with its many sorrows, is past.

There is another heresy of precisely the opposite description; it is the doubt whether science will not quench the love of nature; whether there is not a drudgery and cold exactness in science, which will destroy this animated feeling. It evidently had no such effect in the men just mentioned. True; but it may be said, they persevered in the hope of glory; it may not be so with those who study for pleasure and improvement alone. This impression is founded on the precious maxim, that ignorance is the mother of devotion; and truly nature and religion both are little beholden to those who make this their creed. Perhaps it is not easy to explain the self-sustaining principle, which induces men to devote themselves to a favorite pursuit, and repays them for all their labors. But they can easily see its effects; they can see how soon a burning thirst for knowledge takes possession of their souls. There is no danger which they will not face; there is no hardship which they will not undergo, if it will enable them to solve those mysteries which, of all things, they desire to know. There was, no doubt, a dim magnificence in the imagination which an ancient Magian formed of the heavens; but could it compare in grandeur with the view of Newton, who looked through the system with the searching brightness of an archangel's eye? It would be hard indeed to believe, that we shall love nature less in proportion as we know it better.

It is not the love of nature, which refuses to be enlightened. It is a superstitious feeling, which would be more properly called the fear of nature. The Bramin, when the English officer shewed him with his microscope that he must needs destroy life in eating, was miserable to find that he was always violating that Pythagorean law, which it was the glory of his

life to observe. He should, however, have been grateful ; for the information which he had thus gained, sorely against his will, might have opened his mind to the teaching of a better philosophy and a better religion. What can be the charm of error? Why so strong dislike of the revolutionary spirit of science, which restrains the power of the moon, disarms the stars of their malignant influences, strips the *ignis fatuus* of its terrors, and sends back the ghost to its grave? What satisfaction can there be in believing that serpents have power to fascinate, or that birds can foretell the destinies of men? There are many to this day, who are provoked to hear it denied that house sparrows change into snowbirds in the winter, or that the swallow, a bird of most untiring wing, instead of retreating before the storm, escapes it by diving into the mud. The true lover of nature is a lover of truth, and as Johnson said of Sir Thomas Brown, is willing to pay labor for it ; though he may not manifest it precisely like that eminent man, who, "having heard a rumor of sympathetic needles by which, suspended over circular alphabets, distant friends or lovers might converse, procured two such alphabets, and placed them on the proper spindles. The result was, that when he moved one, the other, instead of taking by sympathy the same direction, stood like the pillars of Hercules!"

But it may be said, that, allowing there is no reason to expect to find men indifferent to these sciences, we see in point of fact, that they are so ; not that they do not take pleasure in results, but there are few who give much attention to them, and hardly three or four in a nation who make them the business of their lives. But to say that these studies inspire no general interest, is only saying in other words that they are not generally known. Knowledge is the cure for indifference ; that which one does not know, of course he does not care for ; but as we grow acquainted with the subject, our interest is excited in one way or another. We may not like it more ; if not, we shall dislike it more ; our feeling will take decided forms, either of partiality or aversion. It is always found by experience, that the more one knows of these things, the more he will desire to know. The facts at first may seem few and meagre, and the reward unequal to the labor ; but as we go on the field enlarges, and we begin to ask where nature can have hidden these surprising things, while the wonder is that we have not noticed these things which have lain close under our

eyes. We have heard divines say, that in another world, the wonders of Providence will be unfolded to view. Another world? What world do they live in? At the moment while they are saying it, they are surrounded with unexplored and unsuspected wonders. Another world! Why, this becomes another world to the man who opens his eyes. Science breathes life and light into it; it kindles with glory, happiness, and praise; there is no one who cannot feel its inspirations if he will.

Some naturalists of the present day, as Linnæus did before them, complain that the science is not even held in reverence, and they hardly mention the subject without a reproof to those who treat it with levity and scorn. Something, however, must be forgiven to human nature. They must pardon a smile when the naturalist is descanting on the wonders of an insect's wing, for those who are guilty of this irreverence, only smile at the physical disproportion between his subject and himself, and they do not doubt that he has found something in it worthy the attention of enlightened minds. Are we to suppose that Franklin raising his kite, or Newton blowing his soap bubbles, was secure from this kind of martyrdom? Those who saw them thus employed, must have thought, to say the least, that the sages were engaged in very singular recreations. Naturalists sometimes bring ridicule upon themselves, by affecting a magnificence not called for by the occasion. Thus Kirby and Spence were so transported at witnessing the evolutions of a party of gnats upon the wing, — their celestial dances, as they called them, in which they were "rising and falling, transparent and glorious," that they could think of nothing but "angels and glorified spirits, drinking life and joy from the effulgence of divine favor." Is it a sin to smile at such lucubrations? Those able naturalists should have remembered, that for one instance in which such language would exalt a mortal's devotion to the skies, there would be hundreds in which it would be more likely to draw an angel's down.

But passing from these more general views of the subject, we will attempt to direct attention to some of the purposes to which these studies should be applied.

First of all, to the purpose of improving the minds of the young, and a more important purpose we do not know. They should be instructed in Natural History, not because it may lead to something useful, but because, with-

out looking to any other result, the mere pursuit is improving to the mind and heart. We will not contend for the preëminence of these studies. Every one, which brings the mind into action, will do good. But the great thing is to find such studies, as may bring the mind into willing and cheerful action ; if they do not, the child may acquire that mechanical facility which often passes for real improvement, while it is, in fact, injurious to the intellectual powers. There are too many studies, which their minds play upon, — perhaps work upon, while they are dealing all the time with words and not with things. “ Words,” it has been said, “ are the daughters of earth ; things are the sons of heaven ;” but in many studies, the mortal claims and receives what belongs to the immortal. The observation of children needs to be cultivated more than the memory ; the habit of remembering is in great part mechanical, and easily brought to perfection ; the habit of observing with the mind open as well as the eye, is not so easily formed ; but it is so important to all kinds of success in later years, that the science which will do most to form it in the young, carries with it its own recommendation. We think that Natural History will be found, more than any other, to fasten itself upon the mind, and to give a cheerful excitement to all its powers. We have never seen anything more beautiful, than the desire of knowledge which the young sometimes discover ; “ the soft, dark, earnest eye ” turned in breathless attention upon him who endeavors to instruct them. There is something fresh and animating in their view of the creation ; they long to know everything within their sphere ; the world seems enchanted ; it awakens trains of thought and feeling, which, to them, are glorious and unbounded. As they grow older, this curiosity subsides ; indifference grows and gains upon them, till, when they are men, they stand without interest amidst the beautiful and grand of nature, conscious of their ignorance, and yet not desiring to know. Verily, the doctrine that man must be born again, is philosophically as well as religiously true ; he must renew the childhood of his soul, before he can ever desire to learn what it is shameful not to know. Restore him his childlike feelings, and his cold heart will kindle with new intellectual desires ; he will burn to know the history of every thing, — of every delicate flower on the earth, and every bright star in the sky ; and when he sees the countless multitude of wonders that solicit his attention, he will begin to

value the hope, — perhaps we should call it something more than hope, — that he may walk forever in the same path of knowledge, of light shining brighter and brighter, which he is travelling in this world below.

Children, then, are not only proper subjects, they are by far the best subjects of this kind of instruction. Instruction we call it, though it depends on themselves far more than others; these are pursuits in which the schoolmaster, whether abroad or at home, can do but little to aid them. The strong heart and active mind work out their own improvement, or nothing is done. They must, indeed, leave the schoolmaster within his narrow prison, and go out into the fields to strengthen their physical powers by exercise, and their minds by observation. It is not every study which will bear to be thus pursued; but those which will, afford a relief from the unnatural confinement which our systems of education impose on their disciples or victims. They supply that nervous impulse, without which, physiologists tell us, we may exercise forever with very little advantage. We are not about to declaim concerning these systems; there may be some danger of their improving the intellectual at the expense of the physical powers. But it seems to us, that the greatest danger is, that they will improve neither; if the body loses strength, the mind will sympathize with it. In a great proportion of those cases, in which the young mind is thought to be making ruinous efforts, the mind is as inactive as the form. There is some easy play of memory which counterfeits mental exertion; or the look of lassitude passes for an intensely thoughtful expression. Though there are cases of disease in which the mind is preternaturally developed, in general it is true, that the mind cannot be improved, while the bodily powers stagnate and decay.

It is difficult to account for the manner in which these studies have been neglected in youthful education. It certainly is not owing to want of means and advantages; for no one is so situated that he cannot give them some attention. A residence in the country is, doubtless, most favorable; but we find more instances in the city than the country, of those who pursue them with vigor and success. The truth is, that there are no disadvantages which resolution cannot overcome. When Sir Joseph Banks, with Dr. Solander, arrived at Rio de Janeiro, nothing doubting that he should enjoy the happiness

of bringing to light the rich treasures of the country, the Portuguese authorities would not suffer any one of the party to land. This was sufficiently mortifying; but the naturalists, having some live stock on board, bethought themselves that the jealousy of that enlightened government possibly might not extend to them; and under color of procuring fodder for the animals, they received every day a collection of plants from the shore. A little money, judiciously applied, taught the purveyors to consult the taste of the botanists as well as of the cattle; and thus by this simple expedient, they were able to make a considerable collection of Brazilian plants, without setting their feet upon the soil of the country. Mr. Swainson himself, while exploring the forests of South America, was troubled with a complaint which prevented him from walking. Meantime he despatched the three Indians who were with him in search of insects, birds, and other animals, while he remained at home. Thus every day added something to his collections, besides providing food for the party. He passed the morning in preparing the skins of the birds, and arranging the insects, and the evening in looking over the new acquisitions brought in by his men; and thus was able not only to amuse the tedious hours of his confinement, but to continue his pursuits with vigor and success. Such examples shew, that there is no situation in which these studies cannot be pursued. Neither is it such men only who can do these things; it does not require the knowledge of a master to begin with; the author mentions the case of a female friend, who, during a long illness, employed herself in making a collection of English plants. An intelligent servant was sent out to collect them; feeble though she was, she examined and arranged them; and in this way passed years in happiness and improvement, which otherwise would have been entirely lost.

When these studies can thus be attended to under many disadvantages, it seems strange that, even if neglected in youthful education, they should not have formed a part of that process of self-education, which every cultivated mind passes through. The reason of their forming no part of youthful instruction is, that they do not appear to be an essential preparation for any business in life; — a test which would, if followed out, put to flight many of those branches of learning that are most important to the interests of the mind. The meaning of it seems to be, that these studies are important, not to the mer-

chant, the lawyer, the clergyman, the mechanic, but only to the *man*. And really one is tempted to ask, if the man is not to be regarded? Is there no such thing as improvement, which cannot be estimated by the bearing it will have on our prosperity and success in life? Must not every one who has a heart and soul acknowledge, that to strike out new sources of intellectual enjoyment, — enjoyment which rests not in itself, but carries the soul onward and upward, — enjoyment which is of itself improvement, is as great a service as can be rendered to man, considering him not as a being placed here to travel to the tomb, but as one who has a character to form, for an eternal existence? We have many false standards to cast away, before we shall be able to tell discerningly what objects in life we should most earnestly pursue.

But, admitting that immediate results, bearing on our comfort, are all that we need regard, we have only to look back upon the progress of natural science, another name for the investigation of nature, to see what it has done for the benefit of men. What is there, from the reader's spectacles to the reviewer's paper and pen, which observation has not drawn out from the great treasures of the natural world? Does any one think that the world is travelled over, so that nothing remains to be explored? So far from it, the spirit of observation, when under the direction of science, labors with tenfold more success, and unfolds, even in the most beaten paths, a thousand resources of which man never dreamed. Look, for example, at the progress of horticulture. How many would have laughed at the idea of forming societies in reference to fruit trees, of which all the kinds were so familiarly known? And yet, who does not know, that science is creating new varieties, by following out the suggestions of nature? There can be no doubt, that science will be continually drawing out new resources from the vegetable world. Fruits that are now thought worthless will be multiplied, like the crab-apple, into rich and various kinds; roots, like the potato and mandioca, which were poisonous in their natural state, will be disarmed of their venom, and *tamed* for the service of mankind. It may be true, that no new animals may be acclimated and employed in our service; this only proves that we do not want them; but we fully believe that animated nature will furnish resources for the comfort and subsistence of man in future ages, which are little dreamed of now. The whole insect race is passed

over as worthless and contemptible ; we are content to wonder at the Roman supper of snails, the Arab feasting on his locusts, the South African with his roasted ants, and the South American negro with his luxury of grubs. Among us insects have an immunity, of which we trust the advance of science will deprive them. The moschetto winds his horn triumphantly in our ears, boasting that he compels half America to retreat under safety nets for half the year ; the fly revels in every apartment of our houses, as familiarly as if they were his own. The time may come, when the innumerable pests which now murder our sleep, infest our houses, plunder our fruit, and destroy the beauty of our gardens, may appear to more advantage on our tables. There is certainly some prejudice, which must first be overcome ; but it cannot require more courage in the first instance to swallow a snail, than an oyster. Those who cannot rejoice in this application of insects to the purposes of life, may be taught at least how to remove them. The fact is, that every man, woman, and child has a direct interest in these studies. Every man who owns a beast, a field or a tree ; every woman who lives where moths corrupt a garment ; every child who rambles in his holidays, and returns, burning with poison from the hedge, has a direct and pressing interest in studies of this description.

But there is also a moral lesson, which can be learned from the contemplation of nature. Solomon is good authority on this subject, though some have thought that he shone more in morals than in Natural History, when he directed the idle to the ant, to learn the lesson of prudent labor. They are pleased to say that the ant does not prepare its food for the winter, inasmuch as it is torpid throughout that season. In defence of Solomon, we can only say, that he never said that it did ; all he said was, that it prepared its food when it wanted it, and he thought that in that respect, it offered a good example to men. The Oriental taste goes very far in search of such illustrations. Sir William Jones translates from the Persian,

“ Learn from yon orient shell to love thy foe,
And store with gems the hand that brings thee woe ;
Free, like yon rock, from base, vindictive pride,
Emblaze with gems the arm that rends thy side ;
Mark where yon tree rewards the stony shower
With fruit nectareous, or the balmy flower ;
All nature cries aloud, ‘ shall man do less,
Than heal the railer and the smiter bless ? ’ ”

These analogies are sufficiently far-fetched, it is true ; still, they are founded on the right principle, which is that of cultivating the faculty of association, one of those parts of education, which have been strongly recommended, but steadily and almost systematically neglected. It is not, however, a business of the schools ; it belongs more properly to self-education ; if any one will regard it, he may smite his own rock in the wilderness, and supply that thirst of enjoyment, which otherwise will prey upon the soul.

In this country, we often lament that our soil is wanting in powerful associations. Other lands have their ruins, which inspire an interest of the most exciting kind, and men of taste sometimes complain that ours is barren. But what are those ruins ? Are they not monuments of barbarism ? Are they not floating relics of piratical vessels, which have happily sunk in the tide of time ? They commemorate a social system, which, though it was gilded by a few beams of honor and humanity, was in reality a curse to the world, and which those who suffered and mourned under it rejoiced to see passing away. A few associations of generous chivalry, manly spirit and romantic self-devotion, make men cling to these monuments of dark and bloody times. But is it not possible to associate thoughts quite as delightful and inspiring with the works of nature ? Most certainly it is. It is not nature that is wanting ; she spreads out her forms of beauty and grandeur before us, but they excite little interest, because we are wanting to ourselves. We expect to find these associations already existing, while it depends on us to form them. Our eyes do not see, — our imagination must create them ; and if we have the right heart and the right spirit, we can easily and almost without effort create “tongues in the trees,” which shall whisper deep meaning ; “books in the running brooks,” where we can learn more than we ever have known, and “sermons in stones,” the *lastly* of which no one shall be impatient to hear. This is the work of poetry, — that is, *creation* ; where this quickening power exists, the desert need not be barren ; and there is an inviting field for its action in a land like ours.

Though the improvement of our condition is not the most important thing, still it is important, and natural science enables us to secure and advance it. We call ourselves lords of the creation ; but we little know the resources of our dominions ; every year is bringing to light some new treasures ; and, moreover, while

we boast of this aristocracy on earth, there are creatures which threaten to abolish our peerage, unless natural science discovers the means to put them down. The larger animals are subdued to our purposes, or driven out from our bounds: our vegetable enemies, such as the leuco-chrysanthemum and the Canada thistle, can be destroyed by reasonable care; but, meantime, insects, creatures which man can engage single-handed, threaten to overwhelm him with their numbers. Some explore our mansions to prey upon our food, dividing their labor on the most approved principle, to make the destruction sure. Others pay their attention to our wardrobes, and work upon our clothes in silence and darkness; deathwatches drum upon our headboards to enjoy our fright; rosebugs, sawflies and caterpillars of all descriptions lay our gardens and flower beds waste; cankerworms leave our fruit trees barren of every leaf; curculios gather the fruit, and the borer comes to put the finishing stroke to the tree. They seem to ascertain what man values most, and then they know where to commence their depredations. Our only consolation is, that others suffer even more than we; in South America there are tribes which are obliged to bury themselves in the ground, as if for their long sleep, before venomous insects will suffer them to close their eyes. All kinds of historical documents are destroyed by the white ants; for which the future historian of that continent will doubtless remember them in his benedictions. In India, matters are still worse; the ants have been known to board a ship of the line and sink it in the Ganges; the palace of the Governor General at Calcutta is now under their hands, and all the conservatives in the British empire will not save it from the dust.

And now what is to be done? It is true, as we have suggested, that if they eat us and ours, we can take revenge by eating them; and this would seem to be a fair and natural retribution, by which we may punish their transgressions and reduce their numbers. But there is an unhappy prejudice against this course, with which we confess that we sympathize, though against our judgment and conviction. Our only hope then, is in the progress of natural science, which in this and other departments must step forward to remove existing evils. It must beard these minute lions in their den. Moreover, it must teach the human race, that if they will not eat them, it is foolish in the extreme to quarrel with creatures that will. They

are active against their own interest when they allow idle boys to shoot birds, under pretence of protecting fruit, which those same boys are a thousand times more likely to steal and devour. A great point will be gained, when the farmer is able and willing to distinguish his friends from his foes.

Natural History, though it holds out no splendid rewards to those who pursue its studies, will not fail to supply its fair proportion of contributions to the general welfare. Natural Philosophy has furnished its lighthouses and lifeboats for the ocean, its lightning rods and steam engines for the land, and its safety lamp to those who explore the regions below. Chemistry has supplied its bleaching inventions and its medicines, not to speak of the more questionable blessings of dry bone soup, linen rag sugar, and sawdust bread. Natural History, though it seems to content itself with simple descriptions of nature, forbearing to investigate its laws or the action of its powers upon each other, will continually unfold new productions and properties in all its departments; — new uses for animals, vegetables and minerals, and ways in which they can be applied to the benefit of man. It will teach men to employ nature against itself, and so to neutralize many of its evils, shewing how it furnishes the antidote as well as the bane; shewing, in fact, that it never puts difficulties in the way of man, without some corresponding advantage which it rests with them to discover. Of course it will exact something in return; it will require men to look round them with observing eyes, and to pay at least sufficient attention to nature, to know how to estimate the blessings which it bestows. But, for all this, it will abundantly reward him; it will make him happy, by affording something to fill up the vacancy of his mind and heart. If the mind ever rests, its calm is not clear, transparent repose, but corrupt and unhealthy stagnation, and this is a danger to which men are exposed much oftener than they know. We are unconscious of our inaction of mind, because revery is mistaken for thought; a man never looks so profoundly intellectual as when he is thinking of nothing. A solitary walk, — a seat by an evening fire, are said to be favorable to thought, when sometimes, on such occasions, not a thought passes through the mind for hours; thought being the action, and not the dreamy repose of the mind. Now when this science changes the thoughtless into observers; when it teaches them to look with interest upon the insect, whose instinct is so perfect and sure in all its op-

erations ; when it makes them see beauty in the frail loveliness of the flower, which now they crush beneath their feet ; when it leads them to examine the rich plumage or listen to the song of the bird, instead of destroying it with wanton cruelty, it renders them a service which cannot be over-estimated ; it opens fountains of enjoyment for them, which will never cease to flow.

In this point of view, we have no doubt that these studies might be employed as efficient instruments of moral reform. For it cannot be questioned, that most men are driven to lawless indulgence, not by their love of it, — not by the strength of the temptation, — but by the horrors of a vacant mind, which induce them to seek this relief from themselves. The force and resistlessness of the temptation consists, not in its own attraction, but in the unhappiness of a mind preying upon itself, which eagerly catches at any means of relief for the moment, without thinking of the consequences. It is in such vacant and unguarded hours, that the evil spirit of sensual indulgence attracts and secures its victims. Now those pursuits, which furnish an excitement to the mind, will arm it against such fascination, by keeping it in that action, which is as essential to virtue, as it was to eloquence in the opinion of the great master of the art. Moral reforms are apt to resemble those of political parties, which remove one set of evils by substituting another ; but whoever supplies subjects of engaging intellectual interest to the minds of men, goes to the root of the evil, while others are hewing at the branches which spring again as fast as they are cut away.

This science renders us no small service, when it shews us the unbounded liberality of nature, and the readiness with which she surrenders her treasures to man. Trusting in this liberality, man goes forth into the wilderness, such as this country was two centuries ago, taking with him his axe and rifle, and little else beside the strong hand and the strong heart ; for he knows that if he is true to himself and does his own part, nature will never be found wanting. He chooses the place for his habitation ; nature furnishes the tree for his building, its stem for the walls, its evergreen thatch for his roof, its pitchy splinter for his candle, and its branches for his fire. When he is hungry, nature sends him to the forest abounding in the pigeon, the pheasant, and the deer, or to the streams crowded with fish, where his wants are supplied without destroying his patient

laborer the ox, whose services he cannot spare. If he is thirsty, he goes to the spring that rises near his door. Before the earth, then broken for the first time, supplies him with its harvests, he is sheltered, warmed and fed by the bounty of nature.

If we look at the scene again, after a generation has passed away, the place is as different from what it was, as civilized from savage man. Here and there a blackened stump, a memorial of the ancient forest, is seen, but the raw desolation is gone, the rich cornfield waves in the breeze, the yellow grain heaves like the ocean, and the garden is sprinkled with fruits and flowers. The wild stream is tamed, and labors like a servant in the factory and mill; the woods retreat from around him, leaving a few trees to cover him with their friendly shade. That his children may not be tempted to idleness, the fish are withdrawn from the rivers, the bird from the forest, and the wolf and the bear unwillingly retreat from a place which is no longer for them. Thus provided with the means of subsistence, comfort, and even luxury, we might suppose that nature would leave him there. But no; she teaches him to build a more durable habitation from the clay or the stone; the sheepfold and the cotton-plant supply him with clothing; in place of the smoking torch, his lamp is filled from the depths of the Northern Ocean, and when the trees of the forest begin to fail, he is taught to prepare a fire with the fossil from her mines. The earth brings forth so abundantly, that he has leisure for the cultivation of his mind. The result appears in his ingenious inventions, reducing still lower the amount of labor, and placing in the hands of all the luxuries which were for only a few; and that result is yet more plainly manifested in the learning, the research, the habits of thoughtfulness, which are essential to the intellectual and moral being, and which are necessary to give him a full title to the name of man.

In this country, it is exceedingly important that a taste for these studies should be generally spread. We have already far too much of that excitement, which grows out of the quick sympathy of party associations; an excitement which grows by indulgence, till communities, like men under the same circumstances, are unable to take any deliberate view of the great questions which it rests with them to decide. This is the great disadvantage of popular institutions; they imply a thoughtfulness and judgment in the people, while, by placing everything

in their power, they excite them in a manner unknown in other lands. A disadvantage it certainly is ; but it is the disadvantage which attends a great and acknowledged blessing ; and it is made ten times greater than it need be, by the enginery of selfish men, who are always at work to blind the honest and unguarded many ; — to blind the Samson, that they may force him to work in their mill. We formerly believed ourselves to be a cool and uninflamable people. It would be strange enough had it been so, considering the race from which we are descended ; it now appears in a thousand indications, that we resemble the anthracite, which, a few years ago, it was thought could not be kindled by the united powers of hurricane and conflagration. The reason was, that the means of igniting it had not then been discovered. So was it with the American character ; it was cool and unexcitable, only because the means of exciting it had not then been learned and arranged into a system, as they are now. The best, perhaps the only remedy, is to supply resources, and engage as many minds as possible in pursuits of a less stirring description ; science, literature, and all the elegant arts, will be so many calm and unpretending, but still efficient means for securing the peace and happiness of our nation, which is endangered only from within, and which will die by suicide if it perish, and not by any foreign blow.

Mr. Swainson gives no very cheering account of the state of natural science in England, and mentions as one reason of its decline, that it is not honored as it should be, and that literature and science are no passport to public honors and rewards. As for titles and similar small matters, these are unimportant enough in themselves ; there is something supremely ludicrous in the idea of George IV. conferring honor on Walter Scott and John Herschel. But, when a country abounds in such distinctions, which are properly regarded as rewards for services that do credit to the country, if a large class of eminent men are excluded from them, it certainly gives the impression that others are preferred before them, and that their services and exertions are not appreciated nor understood. It will not do for a people, who make so much of such concerns as rewards for political services, to turn to men of science and tell them that such things are not for them, and that they must find their reward in their own pursuits and the general applause of men ; for such language will apply as well to one class of men as another, and the fact that it is not thought sufficient in the case

of military and political services, shews that it has not much meaning in such a country, though it would be perfectly satisfactory in ours. We do not suppose that the titles of Cuvier, Laplace and Humboldt were any honor to them ; they were only the signs that their merit was understood, and therefore were an honor to the governments which bestowed them. Great men are not insensible to applause ; they like to know that their country thinks them deserving of honor ; and it is natural enough that they should feel neglected, if they see respect paid to the services of others which is denied to them.

These are matters, however, with which, in this country, we have very little to do. There are other suggestions in this discourse of Mr. Swainson, which might be of service to us. The recommendation that naturalists should be appointed to attend our naval expeditions, might easily be adopted here. They might not go under that designation, perhaps, but some appointment might be secured for them, which would put them beyond the reach of want, and enable them to pursue their researches under more favorable circumstances than when they go forth alone. The military parties, sent so often into our western regions, might be made far more serviceable than they are, to the cause of science. Much indirect and yet effectual patronage might be extended to able men, by administrations composed of persons who know the value of intellectual things. Something of this kind has already been done ; but much more remains to do ; and no public men will secure to themselves a more honorable remembrance, than those who add the treasures of other lands to those of our own country.

It is for the sake of the country, that we would recommend that such patronage should be extended. Men distinguished by their scientific attainments, will be sure of all the respect which they can desire, either for themselves or their favorite pursuits ; but the country ought to secure the benefit and honor to itself as far as possible. Whether it does or not, the pursuits will be followed and discoveries will be made. The studies are too fascinating to need the excitement of external rewards, and, as we have expressly said, it is not on this ground that we think governments would be wise to give them. Those sciences, which make us acquainted with the liberality of nature, are embraced within the province of religion. Those who engage in them most devotedly, have their religious feelings quickened by their familiarity with nature. For science, in our day,

is not satisfied with investigating properties, laws and powers, it insists on looking for benevolent design ; it considers its work unfinished, till it ascertains the purpose of kindness with which everything was created. Thus it is, that religion exerts a commanding influence over all the pursuits of enlightened minds ; they feel that it is only in the religious direction, that they can travel from glory to glory.

ART. VIII. — *Mrs. Sigourney and Miss Gould.*

1. *Poems.* By MRS. L. H. SIGOURNEY. Philadelphia. 1834.
2. *Poems.* By MISS H. F. GOULD. Boston. 1835.

MANIFOLD are the perils, according to Madame de Stael, that beset the female writer who aspires to fame ; in a monarchy, she must expect to be assailed with the poisoned weapons of ridicule ; in a republic, with the formidable if less fatal enginery of universal hatred. But the remarks of this lady are not to be received as undisputed axioms ; they were apt to be suggested by her own feeling, rather than by observation of the world around her ; nor is there one of her many writings, in which she herself forgets, or suffers the reader to lose sight of her personal claims to sympathy. She said this in the bitterness of her heart, while, by the streams of Babylon, and amidst the serious privations that wait on exile, she remembered the place which she regarded as the wandering Hebrew did the Holy City, — the scene of her intellectual victories, the field in which alone she could encounter spirits as fiery and restless as her own. The experience of one, of a genius so erratic and peculiar, gives no just indication of the destiny awaiting others ; the burning track of the comet does not shew the unchanging orbit of a planet. Even her own fortunes were no fair illustration of the justice of her own remark. It was not her literary talent that exposed her to the ridicule or hatred, which she herself encountered ; it was not her philosophy or eloquence, that brought down upon her the ponderous vengeance of Napoleon ; she might have written till the twentieth century, without being driven out from the paradise of her affections ; it was rather the consuming passion for power and distinction, —